Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application. Applicant has submitted a new complete claim set showing marked up claims with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing.

Listing of Claims:

1.   (Currently amended) A <u>computer-implemented</u> method <u>carried out by a computer including at least one processor coupled to memory storing computer-executable instructions that cause the computer to carry out the method, the method</u> comprising:

          computing a minimum cost path in a stereo disparity model between a scan line of a first image and a corresponding scan line of a second image of a stereo image pair, the stereo disparity model distinguishing between non-fronto-parallel matched pixels in each scan line and occluded pixels in each scan line, the computing comprising ~~using~~ <u>applying</u> a geometric three plane model <u>to distinguish non-fronto-parallel matched moves from occluded moves between adjacent pixels in the stereo disparity model</u>~~for dynamic programming~~.

2.   (Currently amended) The <u>computer-implemented</u> method of claim 1 wherein the computing operation comprises:

          computing matching costs for each pixel of each scan line pair.

3.   (Currently amended) The _computer-implemented_ method of claim 1 wherein the computing operation comprises:

computing matching costs for each pixel of each scan line pair using a windowed matching cost function.

4.   (Currently Amended) The _computer-implemented_ method of claim [[1]]2 wherein the computing operation comprises:

altering the matching costs for at least one pixel pair based on whether the pixel pair is determined to be associated with a non-fronto-parallel surface or an occlusion.

5.   (Currently amended) The _computer-implemented_ method of claim 1 wherein the computing operation comprises:

determining a minimum cost path in the stereo disparity model using anisotropic smoothing.

6.   (Currently amended) The _computer-implemented_ method of claim 1 wherein the computing operation comprises:

applying a cost penalty to a move from an occluded pixel pair to a matched pixel pair.

7.   (Currently amended) The _computer-implemented_ method of claim 1 wherein the computing operation comprises:

applying a cost penalty to a move from a matched pixel pair to an occluded pixel pair.

8.   (Currently amended) The computer–implemented method of claim 1 wherein the computing operation comprises:

applying a cost penalty to a move from an occluded pixel pair to another occluded pixel pair.

9.   (Currently amended) The computer–implemented method of claim 1 wherein the computing operation comprises:

applying a first cost penalty to a move from an occluded pixel pair to another occluded pixel pair; and

applying a second cost penalty to a move from a matched pixel pair to an occluded pixel pair, the first cost penalty being different than the second cost penalty.

10.   (Currently amended) The computer–implemented method of claim 1 wherein the computing operation comprises:

applying a first cost penalty to a move from an occluded pixel pair to another occluded pixel pair; and

applying a second cost penalty to a move from a matched pixel pair to an occluded pixel pair, the first cost penalty being less than the second cost penalty.

11.   (Currently amended) The computer–implemented method of claim 1 further comprising:

computing a cyclopean virtual image scan line based on corresponding pixels of the scan lines of the first and second images, a disparity of the corresponding pixels being characterized by a minimum cost path of the stereo disparity model.

12.   (Currently amended) The computer-implemented method of claim 1 further comprising:

computing a cyclopean virtual image scan line based on corresponding pixels of the scan lines of the first and second images, wherein corresponding pixels that are matched are projected as a virtual pixel onto the cyclopean virtual image scan line.

13.   (Currently amended) The computer-implemented method of claim 1 further comprising:

computing a cyclopean virtual image scan line based on corresponding pixels of the scan lines of the first and second images, wherein corresponding pixels that are averaged to determined a value of a resulting virtual pixel on the cyclopean virtual image scan line.

14.   (Currently amended) The computer-implemented method of claim 1 further comprising:

computing a cyclopean virtual image scan line based on corresponding pixels of the scan lines of the first and second images, wherein a non-occluded pixel of an occluded pair of corresponding pixels is projected as a virtual pixel onto the cyclopean virtual image scan line from a background disparity in the stereo disparity model.

15.   (Currently amended) The computer-implemented method of claim 1 further comprising:

computing a cyclopean virtual image scan line based on corresponding pixels of the scan lines of the first and second images, wherein a value of a non-occluded pixel of an occluded pair of corresponding pixels is selected as a value of a resulting virtual pixel on the cyclopean virtual image scan line.

16.   (Currently Amended) A computer program product encoding a computer program for executing on a computer system a computer process, the computer process comprising:

computing a minimum cost path in a stereo disparity model between a scan line of a first image and a corresponding scan line of a second image of a stereo image pair, the stereo disparity model distinguishing between non-fronto-parallel matched pixels in each scan line and occluded pixels in each scan line, the computing comprising using distinguishing between non-fronto-parallel matched moves and occluded moves between adjacent pixels within a geometric three plane model for dynamic programming, the geometric three plane model including a right occluded plane, a left occluded plane and a matched plane, the distinguishing between non-fronto-parallel matched moves and occluded moves including biasing to keep runs of non-fronto-parallel matched pixels or occluded pixels together.

17.   (Original) The computer program product of claim 16 wherein the computing operation comprises:

computing matching costs for each pixel of each scan line pair.

18. (Original) The computer program product of claim 16 wherein the computing operation comprises:

computing matching costs for each pixel of each scan line pair using a windowed matching cost function.

19. (Currently amended) The computer program product of claim [[16]]17 wherein the computing operation comprises:

altering the matching costs for at least one pixel pair based on whether the pixel pair is determined to be associated with a non-fronto-parallel surface or an occlusion.

20. (Previously Presented) The computer program product of claim 16 wherein the computing operation comprises:

determining a minimum cost path in the stereo disparity model using anisotropic smoothing.

21. (Original) The computer program product of claim 16 wherein the computing operation comprises:

applying a cost penalty to a move from an occluded pixel pair to a matched pixel pair.

22. (Original) The computer program product of claim 16 wherein the computing operation comprises:

applying a cost penalty to a move from a matched pixel pair to an occluded pixel pair.

23.   (Original) The computer program product of claim 16 wherein the computing operation comprises:

applying a cost penalty to a move from an occluded pixel pair to another occluded pixel pair.

24.   (Original) The computer program product of claim 16 wherein the computing operation comprises:

applying a first cost penalty to a move from an occluded pixel pair to another occluded pixel pair; and

applying a second cost penalty to a move from a matched pixel pair to an occluded pixel pair, the first cost penalty being different than the second cost penalty.

25.   (Original) The computer program product of claim 16 wherein the computing operation comprises:

applying a first cost penalty to a move from an occluded pixel pair to another occluded pixel pair; and

applying a second cost penalty to a move from a matched pixel pair to an occluded pixel pair, the first cost penalty being less than the second cost penalty.

26.   (Original) The computer program product of claim 16 wherein the computer process further comprises:

computing a cyclopean virtual image scan line based on corresponding pixels of the scan lines of the first and second images, a disparity of the corresponding pixels being characterized by a minimum cost path of the stereo disparity model.

27.   (Original) The computer program product of claim 16 wherein the computer process further comprises:

computing a cyclopean virtual image scan line based on corresponding pixels of the scan lines of the first and second images, wherein corresponding pixels that are matched are projected as a virtual pixel onto the cyclopean virtual image scan line.

28.   (Original) The computer program product of claim 16 wherein the computer process further comprises:

computing a cyclopean virtual image scan line based on corresponding pixels of the scan lines of the first and second images, wherein corresponding pixels that are averaged to determined a value of a resulting virtual pixel on the cyclopean virtual image scan line.

29.   (Original) The computer program product of claim 16 wherein the computer process further comprises:

computing a cyclopean virtual image scan line based on corresponding pixels of the scan lines of the first and second images, wherein a non-occluded pixel of an occluded pair of corresponding pixels is projected as a virtual pixel onto the cyclopean virtual image scan line from a background disparity in the stereo disparity model.

30.   (Original) The computer program product of claim 16 wherein the computer process further comprises:

computing a cyclopean virtual image scan line based on corresponding pixels of the scan lines of the first and second images, wherein a value of a non-occluded pixel of an occluded pair of corresponding pixels is selected as a value of a resulting virtual pixel on the cyclopean virtual image scan line.

31.   (Currently Amended) A system comprising:

a dynamic programming module configured to use a geometric three plane model for dynamic programming to compute a minimum cost path in a stereo disparity model between a scan line of a first image and a corresponding scan line of a second image of a stereo image pair, the stereo disparity model distinguishing between non-fronto-parallel matched pixels in each scan line and occluded pixels in each scan line, the dynamic programming module further configured to apply the geometric three plane model to distinguish between non-fronto-parallel matched moves and occluded moves between adjacent pixels in the stereo disparity model; and

a processor.

32.   (Original) The system of claim 31 wherein the dynamic programming module computes matching costs for each pixel of each scan line pair.

33.   (Original) The system of claim 31 wherein the dynamic programming module computes matching costs for each pixel of each scan line pair using a windowed matching cost function.

34. (Currently amended) The system of claim [[31]]32 wherein the dynamic programming module alters the matching costs for at least one pixel pair based on whether the pixel pair is determined to be associated with a non-fronto-parallel surface or an occlusion.

35. (Previously Presented) The system of claim 31 wherein the dynamic programming module determines a minimum cost path in the stereo disparity model using anisotropic smoothing.

36. (Original) The system of claim 31 wherein the dynamic programming module applies a cost penalty to a move from an occluded pixel pair to a matched pixel pair.

37. (Original) The system of claim 31 wherein the dynamic programming module applies a cost penalty to a move from a matched pixel pair to an occluded pixel pair.

38. (Original) The system of claim 31 wherein the dynamic programming module applies a cost penalty to a move from an occluded pixel pair to another occluded pixel pair.

39. (Original) The system of claim 31 wherein the dynamic programming module applies a first cost penalty to a move from an occluded pixel pair to another occluded pixel pair and a second cost penalty to a move from a matched pixel pair to an occluded pixel pair, the first cost penalty being different than the second cost penalty.

40.   (Original) The system of claim 31 wherein the dynamic programming module applies a first cost penalty to a move from an occluded pixel pair to another occluded pixel pair and a second cost penalty to a move from a matched pixel pair to an occluded pixel pair, the first cost penalty being less than the second cost penalty.

41.   (Original) The system of claim 31 further comprising:

a cyclopean virtual image generator computing a cyclopean virtual image scan line based on corresponding pixels of the scan lines of the first and second images, a disparity of the corresponding pixels being characterized by a minimum cost path of the stereo disparity model.

42.   (Original) The system of claim 31 further comprising:

a cyclopean virtual image generator computing a cyclopean virtual image scan line based on corresponding pixels of the scan lines of the first and second images, wherein corresponding pixels that are matched are projected as a virtual pixel onto the cyclopean virtual image scan line.

43.   (Original) The system of claim 31 further comprising:

a cyclopean virtual image generator computing a cyclopean virtual image scan line based on corresponding pixels of the scan lines of the first and second images, wherein corresponding pixels that are averaged to determined a value of a resulting virtual pixel on the cyclopean virtual image scan line.

44.   (Original) The system of claim 31 further comprising:

a cyclopean virtual image generator computing a cyclopean virtual image scan line based on corresponding pixels of the scan lines of the first and second images, wherein a non-occluded pixel of an occluded pair of corresponding pixels is projected as a virtual pixel onto the cyclopean virtual image scan line from a background disparity in the stereo disparity model.

45.   (Original) The system of claim 31 further comprising:

a cyclopean virtual image generator computing a cyclopean virtual image scan line based on corresponding pixels of the scan lines of the first and second images, wherein a value of a non-occluded pixel of an occluded pair of corresponding pixels is selected as a value of a resulting virtual pixel on the cyclopean virtual image scan line.